REMARKS

This response is filed in response to the Office Action mailed February 1, 2006.

The Examiner withdraws the rejection of Claims 55, 88 and 89 due to Applicants' prior amendment of the claims.

The Examiner rejects Claims 55, 57-59, 88 and 89 under 35 U.S.C. § 102(e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over newly cited art, *Kain, Jr. et al.* (6,180,206).

Applicants respectfully urge that *Kain, Jr.* does not anticipate or make Applicants' claimed invention obvious and request withdrawal of the Examiner's rejection placing the application in order for allowance.

Rejection Under 35 U.S.C. § 102(e) and 103(a)

The Examiner rejects Claims 55, 57-59, 88 and 89 under 35 U.S.C. § 102(e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over *Kain, Jr. et al.* (6,180,206).

Kain, Jr. is only designed to reduce slippage between the honeycomb core and the facing ply for applications on fixed leading edges where the lower skin laminate abuts the panel's erosion strip. Col. 3 lines 19-23 and Claim 1. *Kain, Jr.* does not teach or suggest a method of reducing core crush throughout a honeycomb core laminate not involving an erosion strip as claimed by Applicants and therefore does not anticipate or make Applicants' claimed invention obvious. As such, Applicants respectfully request the Examiner's withdraw his rejection and allow the application.

Kain, Jr. is clearly distinguished from Applicants' claimed invention by its own disclosure in that all of the prepreg plies used, including the "facing ply" are standard prepreg plies. "I use only the structural plies required for the performance of the panel with a new arrangement of those plies while preventing core crush." *Kain, Jr.* Col. 8, lines 51-54. "The facing ply that is in contact with the core in the present invention is a structural, full...woven fabric 0/90 ply impregnated with a resin (a prepreg)..." Col. 8, lines 36-39. Furthermore, reference to Figure 10, identifies that the inventively arranged "facing ply" of *Kain, Jr.* is referred to as "Ply 6." Table 1 of

Kain, Jr. clearly shows that "Ply 6" is of the same material as Ply 1, Ply 3, Ply 7, Ply11 and Ply 14. Additionally, *Kain, Jr.* does not suggest that any of the plies used are materially different. Accordingly, the inventive aspect of *Kain, Jr.* is in the placement and "new arrangement" of the plies, rather than a novel difference in the construction of any of the plies.

In contrast, Applicants claim a novel "stiffness-treated fabric" prepreg ply. *Kain, Jr.* does not teach or suggest a stiffness-treat fabric prepreg ply as claimed by Applicants.

Kain, Jr. further requires that its novel "facing ply," "Ply 6" is in contact with the honeycomb core. Figure 10, Claim 1, Col. 8, lines 36-39. This "facing ply" is not taught to be placed anywhere else in the ply laydown and indeed, its novelty is in its "new arrangement" in contact with the core where it "extends over and beyond the metal erosion strip." Col. 8, lines 53 and 43-44.

In contrast, Applicants' claim that its novel stiffness-treated ply is not in contact with the honeycomb core.

Kain, Jr. further teaches that its invention is designed to "prevent damaging slippage of the laminate relative to the core" whereas Applicants invention is to reduce slippage between adjacent plies by increasing frictional resistance between plies. *Kain, Jr.* at Claim 1 and Col. 3, lines 38-40. The sole purpose of the *Kain, Jr.* technology is to prevent the core from sliding on the prepreg plies; the same problem attempted to be solved by *Corbett,* and does not teach recognition of a problem with slippage between plies or propose a solution to the slippage between plies that causes core crush.

In contrast, Applicants claim a unique stiffness-treated fabric prepreg that has increased friction between it and an untreated prepreg in order to reduce slippage between plies and prevent core crush. Applicants' Claim 1. Applicants have identified and solved a separate problem: slippage between plies.

Kain, Jr. further teaches and claims that its invention is only applicable where an erosion strip is utilized whereas Applicants' claimed invention is applicable to any honeycomb core, irrespective of any erosion strip. Col. 3, line 30-46; Col. 8, lines 40-46; Claim 1. The problem *Kain, Jr.* attempted to solve was slippage of the honeycomb core when all of the laminate plies butted an erosion strip. Where there is no erosion strip, the invention is not applicable. Col. 8, lines 58-60; Claim 1.

In contrast, Applicants' claimed invention is irrespective of any erosion strip. Thus, the limited application of *Kain, Jr.* for erosion strip leading edges does not anticipate or make Applicants' claimed invention obvious.

Kain, Jr. further requires that its facing ply extend over the erosion strip and adhered to the tooling mandrel. Claim 1; Col. 3, lines 25-29; Col. 8, lines 40-46; Figure 10. *Kain, Jr.* does not teach or suggest that its facing ply arrangement will prevent core crush if not extended beyond an erosion strip and adhered to the tooling mandrel.

In contrast, Applicants' invention is to prevent core crush throughout a honeycomb core arrangement and is not required to extend over a corrosion strip or adhere to a tooling mandrel.

Next, the Examiner asserts that "the outer laminate layer of a fiber-reinforced matrix resin and the barrier adhesive correspond to the applicant's stiffness treated fabric comprising the plurality of fibers, polymeric material, and resin system." Applicants respectfully disagree with the Examiner's perception. As discussed above, *Kain, Jr.* does not teach or disclose that any prepreg plies are materially different in construction. All of the *Kain, Jr.* prepreg plies, including the facing ply, are essentially the same. And this is expected as *Kain, Jr.* teaches that it is the new arrangement of the plies that is important and that it is the slippage between the core and the facing ply that it is trying to reduce whereas Applicants claimed invention is increased friction between plies by modifying the construction of a ply through a treatment of the prepreg fibers to reduce slippage between plies.

As such, the *Kain, Jr.* laminate layer and facing ply do not possess any increased frictional resistance as claimed by Applicants. Applicants claim that the frictional resistance between the stiffness-treated fiber prepreg and untreated fiber prepreg is greater than the frictional resistance between two untreated fiber prepregs. Applicants' Claim 1. Accordingly, *Kain, Jr.* neither teaches nor discloses Applicants' claimed invention.

The Examiner further asserts that the stiffness value or frictional resistance limitation of Applicants' claimed invention is inherent in that taught by *Kain, Jr.*

In order to satisfy the judicially created doctrine of inherency the element of a claim that is not expressly disclosed in a prior art reference is inherently disclosed therein if, and only if, the "missing" element is <u>necessarily</u> present. *Hansgirg v.*

Kemmer, 102 F.2d 212, 40 USPQ 665 (CCPA 1939). The "mere fact that a certain thing *may* result from a given set of circumstances is not sufficient." *Hansgirg*, 40 USPQ at 667 (emphasis in original). Similarly stated, the reference "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." *Continental Can v. Monsanto*, 948 F.2d 1264, 20 USPQ 2d 1746 (Fed.Cir. 1991).

Applicants respectfully traverse the Examiner's assertion.

As it is clear that there is no requirement that the facing ply and the laminate plies of *Kain, Jr.* are materially different, there is no basis that they may, much less necessarily always sufficient for inherency, display increased frictional resistance over identical plies. Indeed, as the plies are not intended to be materially different, there should never be any significant differences. In contrast, Applicants' claimed invention requires a ply with different stiffness value such that the frictional resistance between a stiffness-treated fiber prepreg and an untreated fiber prepreg is greater than the frictional resistance between two untreated fiber prepregs.

As previously discussed at length, Applicants' stiffness-treated fabric prepreg is not the same as merely applying a resin matrix to the fiber as in a standard untreated prepreg. In this way, a treated prepreg as claimed by Applicants exhibits greater frictional resistance than an untreated prepreg. Thus, although the Examiner suggests that "similar materials [are] used to produce a prepreg layer," the *Kain, Jr.* and the Applicants prepregs are not the same and do not (and the *Kain, Jr.* prepregs cannot) exhibit increased stiffness or frictional resistance. Nor is the frictional resistance obvious from the process disclosed by *Kain, Jr.* as urged by the Examiner. Indeed, *Kain, Jr.* does not teach, suggest or disclose a process for making a stiffness-treated prepreg, or any different type of prepreg that exhibits a greater frictional resistance as claimed by Applicants.

Applicants respectfully request reconsideration of the present application and that the Examiner's rejections be withdrawn.

Accordingly, it is submitted that the prepreg of a honeycomb sandwich structure precursor of the present invention as claimed by Applicants is patentable and not anticipated by the prior art including *Kain, Jr.* It is submitted that Claims 55, 57-59, 88 and 89 define a patentable invention and prompt allowance is sought. Please direct any questions to the undersigned attorney at (714) 666-4396.

The Commissioner is hereby authorized to charge any additional fees associated with this paper or during the pendency of this application, or credit any overpayment, to Deposit Account No. 03-4083.

Respectfully submitted,

Dated: March 31, 2006

Cytec Industries Inc.
1937 West Main Street
P.O. Box 60
Stamford, CT 06904
Telephone (714) 666-4396
Facsimile (203) 321-2971

Robert R. Neller
Registration No. 46,950
Attorney for the Applicants